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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/516,274	02/29/2000	Victor Michael Aquaro	1-1-36-86	9602

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EXAMINER

NGUYEN, TUAN N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/516,274

Applicant(s)

AQUARO ET AL.

Examiner

Tuan N Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

FINAL

Claim Rejections - 35 USC § 102

1. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 8, 15 are rejected under 35 U.S.C. 102(b) as being unpatentable over Scifres et al. (US 4818062).

With respect to claims 1, 8, 15, 16 Scifres '062 shows in figures 1-4, 8, 11 a multimode tapered structure (F2: 17) for coupling a multimode laser (F2: 11, 45) to a multimode fiber (F2: 53)(F4: 27, 33), comprising an input end having an elliptical cross section for coupling with multimode laser (F2: 51, 47, 49, 11, 45), and output end having a circular cross section for coupling with said multimode fiber (F2: 53)(F4: 27, 33). He further show the multimode laser source having a rectangular aperture (F2: 11) (F8: 81), the multimode fiber having a core surrounded by a cladding (F2: 49). Since claim 15 recites the same or identical elements/limitations it is inherent to use patents ('062) to recite the method of coupling multimode laser to a multimode optical fiber, product by process.

With respect to claims 2-3, and 9-10, Scifres et al. '062 shows in figures 2, and 4 the elliptical cross section approximately matches the rectangular aperture of said laser (F1: 49), and circular cross section approximately matches the core of the fiber (F4: 31), where tapered structure is smaller in dimension at input end to a larger dimension at output end (F2: 49, 53).

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With respect to claims 5-6, and 12-13 Scifres et al. ('010) shows in figures 2, 8 and 11, the tapered structure has a numerical aperture and a length provide desired coupling efficiency (col 5: 54-56) (F8: 103, 105, 107) (F10: 103, 105, 107.)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

4. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scifres et al. (US 4818062). Scifres '062 shows in figures 2:51 the elliptical cross section of the input and the circular output (F2: 53) of the taper region. Scifres did not disclose whether the input is larger or the output larger. It has been held that a change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

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5. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scifres et al. (US 4820010) in view of Rope et al. (US 6252715). Scifres et al. disclose the above except optical beam having a highly elliptical beam shape. Rope et al. ('715) discloses of beam pattern often elliptical and focus element where converting elliptical beams to circular beam for output. It would have been obvious to one of ordinary skill in the art to provide Scifres '010 optical beam having a highly elliptical beam shape and focus element to converting elliptical beams into a circular beam for output as suggested by Rope et al. ('715), for the benefit of stronger focus.

Response to Argument

6. Applicant's arguments filed on June 02, 2003 have been fully considered but they are not persuasive.

In relating with the independent claims, Scifres et al. '062 (F 5-7: 62, 63, 64, 67) showing a multimode tapered structure that couples to a multimode fiber, and an actual "end of the tapered structure – Front Fig #53" that used to coupled to another fiber "for extension". Normally these coupling structure are made of the same materials so that same wavelength can pass through the coupling element to the fiber, so there will be no lost; therefore there is nothing wrong with the fiber being "squash" or "trimmed" to get a desirable structure, as long as the required wavelength passed through. The reference shows exactly all limitation of the claim " an input end having **an elliptical cross section** for coupling with said multimode laser" and an " output end having **a circular cross section** that couples with a fiber" FRONT PAGE FIG #51, 53. Even if the applicant intend to claim the input end is smaller then the output end "corresponding with applicant Fig1: 200), it would have been an obvious matter of design

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choice, or being within the level of ordinary skill in the art to design the coupling ends to fit the fiber endings for fitting.

If Rope et al. '715 did disclose the multimode tapered structure, multimode fiber and multimode laser, it could be used as 102 rejection.

FINAL Conclusion

9. The prior art made of record and relied upon is considered pertinent to applicant's discloses.

Scifres et al. US 4688884/ 4763975- '884 Fig1,2,3 showing a tapered elliptical multimode input;

Severijns et al. US 4698084 - Fig 1b, 2a-c, 3b-d showing tapered multimode input;

Pan (US 5016963) – Fig 1-5; Sheem (US 5515464) – Fig 3, 7-25; Fidric et al. (US 64343902) – ABSTRACT & Fig 4-13c. ; others see attached 892 form.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

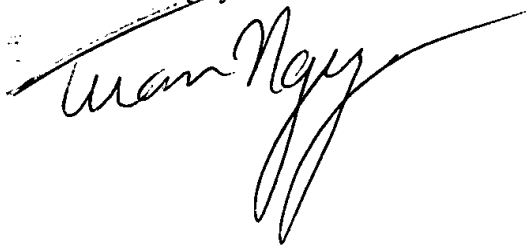
Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Tuan N. Nguyen



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